Food and Agriculture Organization of the United Nations

GLOBAL FOREST PRODUCTS FACTS AND FIGURES 2018

INDUSTRIAL ROUNDWOOD

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PAPER AND PAPERBOARD

WOOD FUEL, CHARCOAL AND PELLETS

SHOUT
SHARE
IT

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GLOBAL FOREST PRODUCTS FACTS AND FIGURES 2018

FAO's forest product statistics present figures for the production and trade (quantity and value) of forest products, covering 59 product categories, 24 product groups, and over 245 countries and territories. Final statistics are released at the end of each year and can be found on-line in the *FAOSTAT-Forestry database* from December, before they are published in the *Yearbook of Forest Products* the following April. The on-line database archives data from 1961, and the yearbooks date back to 1947.

HIGHLIGHTS FROM 2014–2018

This note presents highlights and recent trends in data for each of the main product groups, as well as a short summary of recent changes or improvements in statistics. Key findings are highlighted below.

- Global production and trade of all major wood-based products recorded their highest ever values in 2018. Production, imports and exports of roundwood, sawnwood, wood-based panels, wood pulp, wood charcoal and pellets reached their maximum quantities since 1947 when FAO started reporting global forest product statistics. In 2018, growth in production of the main wood-based product groups ranged from 1 percent (wood-based panels) to 5 percent (industrial roundwood). The fastest growth occurred in the Asia-Pacific, Northern American and European regions, likely due to positive economic growth in these areas.
- The year 2018 was not as strong for the paper industry. Global production of paper and paperboard contracted by 1.5 percent, owing mainly to disruptions in recovered paper supply and continuous replacement of printed media with digital products.
- In 2018, global industrial roundwood removals grew by 5 percent to reach a record level of 2.03 billion m^3. Global trade grew 7 percent to a record high of 138 million m^3, of which 43 percent was imported by China. New Zealand overtook the Russian Federation to become the top exporter of industrial roundwood in 2018.
- Wood-based panel and sawnwood production (combined) grew in all five regions around the world in 2018. Global production and trade of both panels and sawnwood increased by 2 percent to a record high of 493 million m^3 and 408 million m^3 respectively.
- Canada saw a decline in production and exports of sawnwood from 2016 to 2018 due to trade disputes over import duties imposed by the United States of America, its main market. In contrast, the Russian Federation saw continued growth in sawnwood and panel production and exports, in 2018, surpassing Canada to become the largest sawnwood exporter.
- Global production and trade in wood pulp grew by 2 percent to reach record high levels in 2018 (188 million tonnes and 66 million tonnes respectively). Most of the increased supply of wood pulp came from Brazil and Europe. Conversely, global consumption of recovered paper shrunk by 3 percent to 229 million tonnes, mainly due to declined imports in China.
- In 2018, paper production stagnated in Europe and Northern America, while it grew modestly in Latin America and the Caribbean. It declined in Asia-Pacific and Africa. Global production of graphic papers declined by 4 percent while other paper and paperboard recorded a smaller decrease of 1 percent. Among the top five paper producers, only India recorded growth.
- China, by far the largest producer and consumer of wood-based panels and paper, has grown in importance as both a producer and consumer of forest products, and has recently overtaken a number of other big players in key product groups (e.g. the United States of America in sawnwood production). China is also highly significant in international trade of forest products, being the world's largest importer of industrial roundwood, sawnwood and fibre furnish (pulp and recovered paper), and the largest exporter of wood-based panels. In 2018, China's imports of industrial roundwood increased by 8 percent. Sawnwood and panel production and consumption continued to grow faster in China than in the rest of the world.
- Wood pellet production has increased dramatically in recent years, mainly owing to demand generated from bioenergy targets set by the European Commission. In 2018, global production grew by 11 percent, reaching 37 million tonnes, of which more than half (24 million tonnes) was traded internationally. Europe and Northern America accounted for most of the global production (55 percent and 28 percent respectively); however, the production share of the Asia-Pacific region doubled to 15 percent from 2014 to 2018.
- Europe accounted for 75 percent and Asia-Pacific for another 18 percent of global pellet consumption in 2018. Imports of wood pellets in Asia surged by 51 percent in 2018. Imports of wood pellets increased in Japan and, in 2016, the Republic of Korea became the third largest wood pellet importer, driving up wood pellet production in Viet Nam, Malaysia, Indonesia and Thailand.

INDUSTRIAL ROUNDWOOD

Industrial roundwood is all roundwood used for any purpose other than energy. It comprises: pulpwood; sawlogs and veneer logs; and other industrial roundwood (e.g. roundwood used for fence posts and telephone or electricity poles). This product group is also divided into roundwood from coniferous and non-coniferous species.

Global industrial roundwood removals amounted to 2 028 million m³ in 2018. This is an increase of 5.2 percent compared to 2017 (1 826 million m³) and 8.9 percent compared to the level in 2014 (Figure 1a).

In 2018, removals in each region were as follows: Europe (including the Russian Federation) – 650 million m³ (32 percent); Northern America (USA and Canada) and Asia-Pacific – each 519 million m³ (51 percent combined); Latin America and Caribbean – 261 million m³ (13 percent); and Africa – 79 million m³ (4 percent).

Removals increased in all regions, with highest growth rate in Latin America and the Caribbean (16 percent from 2014 to 2018) and Europe (13 percent) followed by Asia-Pacific (8 percent) and Africa (7 percent). Removals in Northern America grew by 3 percent over the same period.

In 2018, global trade in industrial roundwood amounted to 138 million m³ (equal to about 7 percent of production). Trends in total trade and net trade over the observed period showed a decline of 6 percent in 2015 followed by an increase of 5 percent in 2016, and a 7 percent increase in 2018 (Figure 1b). At a regional level, Asia-Pacific was a net importer of industrial roundwood, and all other regions were net exporters. In 2018, net imports of 41 million m³ accounted for about 7 percent of consumption in the Asia-Pacific region. Europe and Northern America were the main net exporters of industrial roundwood, with net exports in 2018 of 12 million m³ and 13 million m³ respectively.

At the country level, the five largest producers of industrial roundwood are the USA, the Russian Federation, China, Brazil and Canada (Figure 2a). Together, these countries produced 1 077 million m³ in 2018, or 53 percent of total global removals. The USA is by far the largest producer in the world (368 million m³ in 2018); removals increased by 4 percent in 2018. Removals in the Russian Federation and China increased by 11 percent, and in Brazil by 5 percent, while Canada saw a 3 percent decline in 2018. Brazil overtook Canada to become fourth largest producer of industrial roundwood in 2018.

Compared with other forest products, exports of industrial roundwood are relatively small and only 20-25 countries export more than 1 million m³ each year. Combined, the five largest exporters accounted for 68 million m³, or 50 percent of all exports in 2018. For the first time, New Zealand became the largest exporter of industrial roundwood in 2018 (11 percent increase from 2017). The Russian Federation, with slight decline in exports in recent years, ranked second. Other major exporters are: United States of America;

FIGURE 1A. Industrial roundwood removals

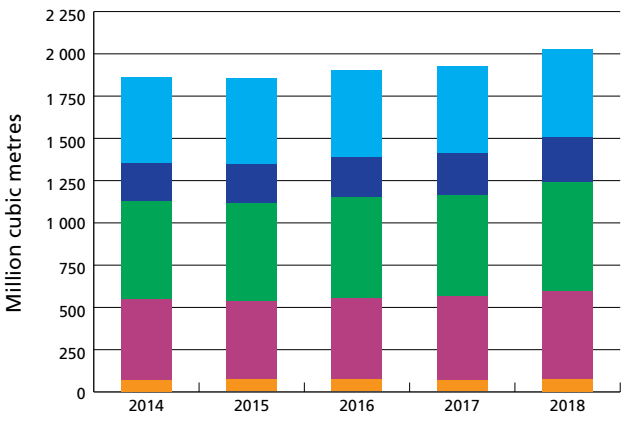
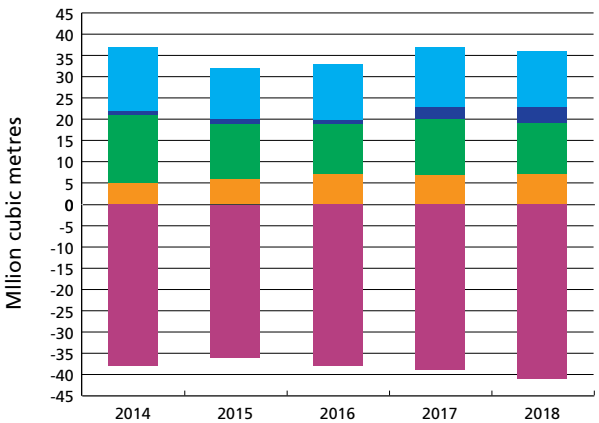


FIGURE 1B. Industrial roundwood net trade



Africa Asia-Pacific Europe Latin America and Caribbean Northern America

Czechia and Canada. Exports from the United States of America increased while those from Canada decreased in 2018. Czechia faces oversupply of logs from forests damaged by bark beetle, therefore its exports jumped by 59 percent from 2016 to 2018 (Figure 2b).

Owing to the relatively small volumes of international trade in industrial roundwood, the five largest producers are also the five largest consumers. USA is by far the largest consumer (356 million m³ in 2018), consumption increased by 4 percent. China is the second-largest consumer (240 million m³ in 2018), with a 11 percent increase in 2018. The Russian Federation is third at 200 million m³ (Figure 3a).

Since 2014, consumption has grown in all major consumer countries except Canada where it remained flat at around 150 million m³.

China's imports reached 60 million m³ in 2018, about 25 percent of consumption. A large share of these imports come from New Zealand and the Russian Federation, although other countries are growing in importance. After China, other major importers of industrial roundwood are Austria, Sweden, Germany and Finland. Austria overtook Germany to become the second-largest importer from 2016 and Sweden overtook Germany to become third in 2018.

FIGURE 2A. Industrial roundwood removals

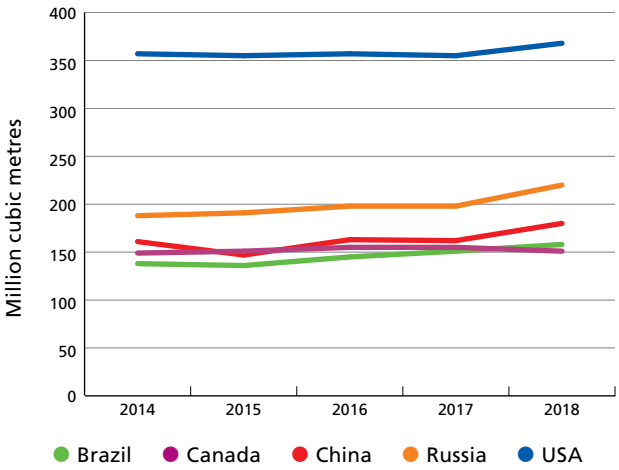


FIGURE 2B. Industrial roundwood exports

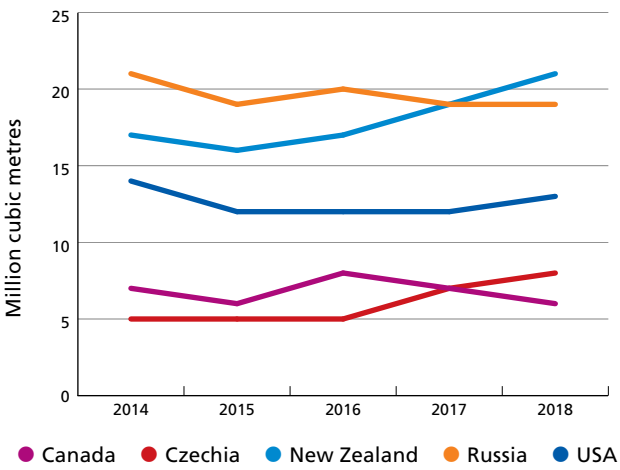


FIGURE 3A. Industrial roundwood consumption

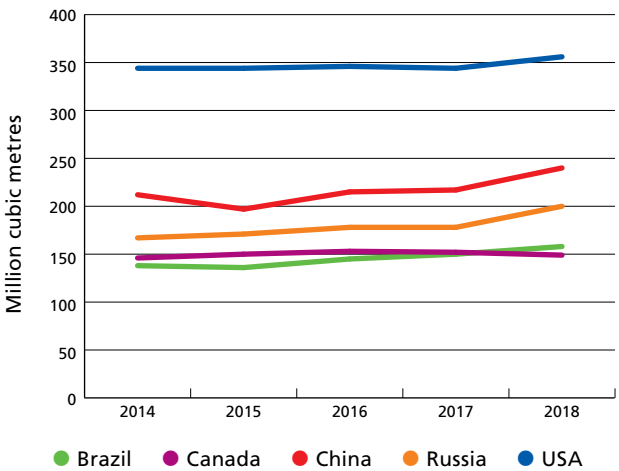
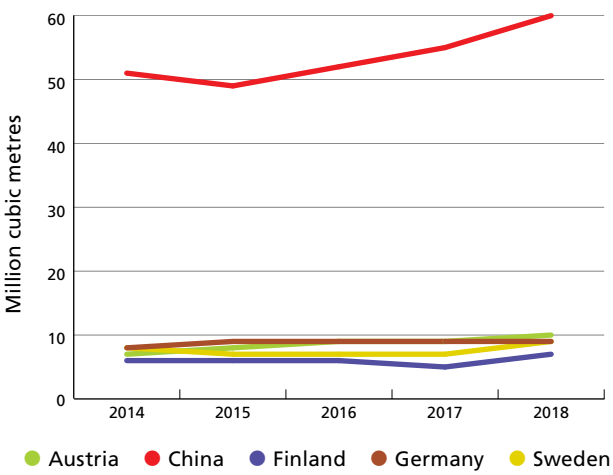


FIGURE 3B. Industrial roundwood imports



SAWNWOOD

Sawnwood encompasses planks, sleepers (cross-ties), beams, joists, boards, rafters, scantlings, laths, boxboards and "lumber", etc. FAO statistics subdivide this category into coniferous and non-coniferous sawnwood.

In 2018, global sawnwood production totalled 493 million m³, which was 2.2 percent higher than in 2017 (482 million m³) and 13 percent higher than in 2014 (435 million m³). Figure 4a shows that sawnwood production grew consistently over the 2014–2018 period. This trend is largely due to increasing production in Asia and the Pacific as well as in Europe and Northern America. In contrast, production in Africa and in Latin America and the Caribbean remained modest over the same period. The latest regional production figures for 2018 are as follows: Europe – 170 million m³ (35 percent); Asia–Pacific – 151 million m³ (31 percent); Northern America – 129 million m³ (26 percent); Latin America and the Caribbean – 32 million m³ (6 percent); and Africa – 11 million m³ (2 percent).

Global trade in sawnwood amounted to 155 million m³ (equal to 31 percent of production) in 2018 and, like production, with a steady increase since 2014. Most of this growth in trade occurred in Northern America, Asia–Pacific and Europe. Net trade between the five regions increased consistently during the observed period (Figure 4b).

The two main importing regions for sawnwood are Africa and Asia-Pacific region, with net imports of 6 million m³ and 55 million m³ respectively in 2018. Europe and Northern America are the main exporting regions, with net exports of 54 million m³ and 9 million m³. Latin America and the Caribbean is a minor net exporter, totalling 4 million m³ in 2018.

At the country level, the five largest producers of sawnwood are China, USA, Canada, the Russian Federation and Germany (Figure 5a). Together, these five countries produced over half (58 percent, or 286 million m³) of the world's sawnwood in 2018. In China production soared by 32 percent, from 68 million m³ in 2014 to 90 million m³ in 2018, making it the largest producer from 2017. USA is the second largest producer; production has grown every year since 2014, reaching 82 million m³ in 2018. Overall production in Northern America grew by 8 percent from its level in 2014 (8 percent growth in both USA and Canada). However, production in Canada declined by 6 percent from 2016 to 2018. Production in the Russian Federation grew during the observed period and reached 43 million m³ in 2018, an increase of 23 percent over the five years. Production in Germany increased by 9 percent over the period.

Three of the largest sawnwood producers are also the major exporters (Canada, the Russian Federation and Germany); the other two main exporters are Sweden and Finland (Figure 5b). Together, these five countries exported 92 million m³ (58 percent)

FIGURE 4A. Sawnwood production

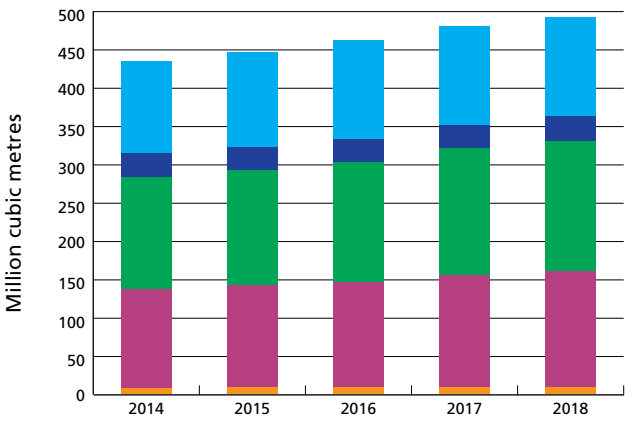
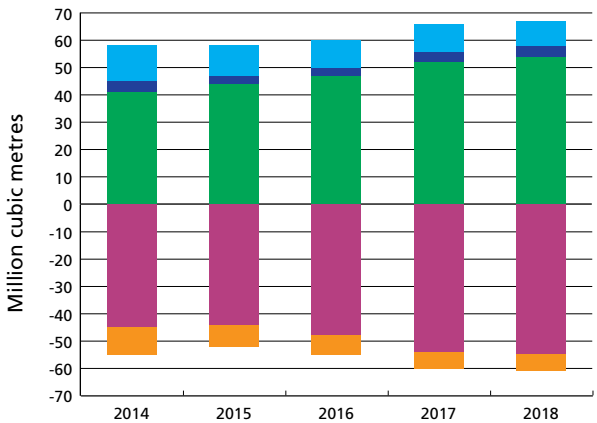


FIGURE 4B. Sawnwood net trade



Africa Asia-Pacific Europe Latin America and Caribbean Northern America

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in 2018. Canada's exports grew until 2016. However ongoing disputes over Softwood Lumber Agreement (which expired in 2015) with USA, its main market, negatively affected Canadian sawmilling industry. From 2016 to 2018, Canada's sawnwood production and exports declined by 6 percent and 9 percent respectively. Exports from the Russian Federation grew by 42 percent from 2014, and it became top exporter in 2018. Exports from Germany and Finland increased and in Sweden remained relatively stable over the period.

As well as being the largest producers, China and the USA were also the two main consumers of sawnwood in 2018, consuming 128 million m³ and 101 million m³ respectively (Figure 6a). China's consumption grew by 34 percent, and the USA's by 11 percent over the five-year period. The other three main consumers of sawnwood in the world are Germany, Canada and Japan.

In 2018, China and the USA imported 38 million m³ and 27 million m³ respectively (Figure 6b). Other major sawnwood importers were the UK, Japan and Germany. Together, these five countries imported 84 million m³ of sawnwood (equal to 55 percent of all imports) in 2018, and in all of these countries, imports accounted for a significant share of sawnwood consumption (29 percent in China, 26 percent in the USA and 40 percent in Japan alone).

FIGURE 5A. Sawnwood production

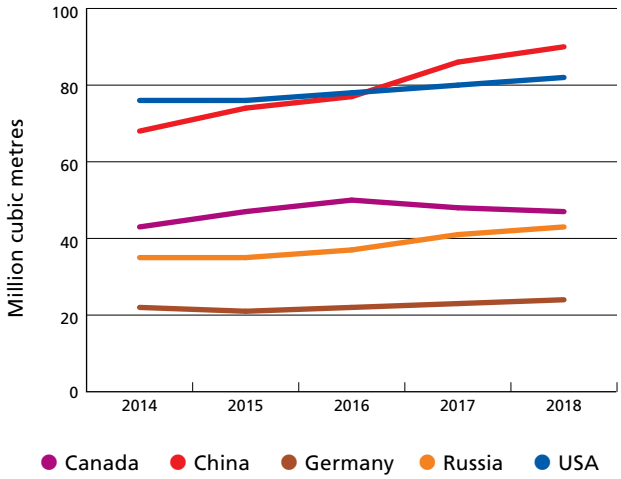


FIGURE 5B. Sawnwood exports

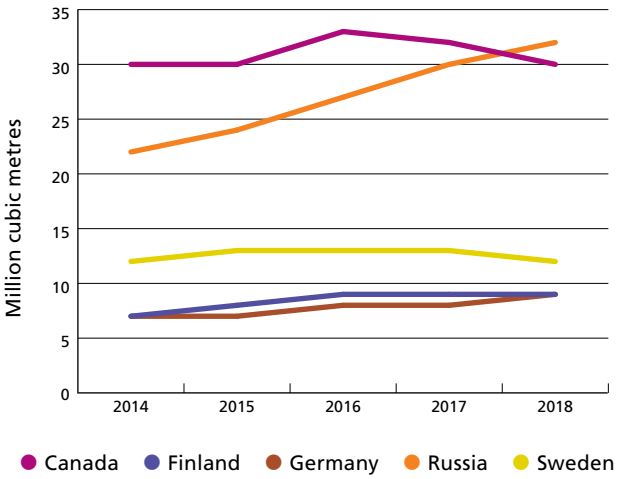


FIGURE 6A. Sawnwood consumption

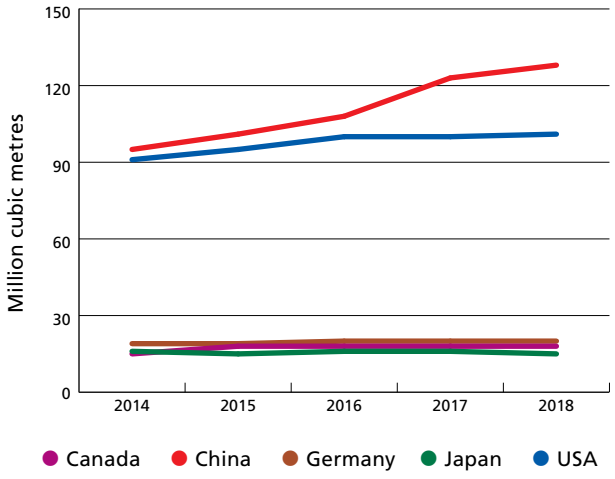
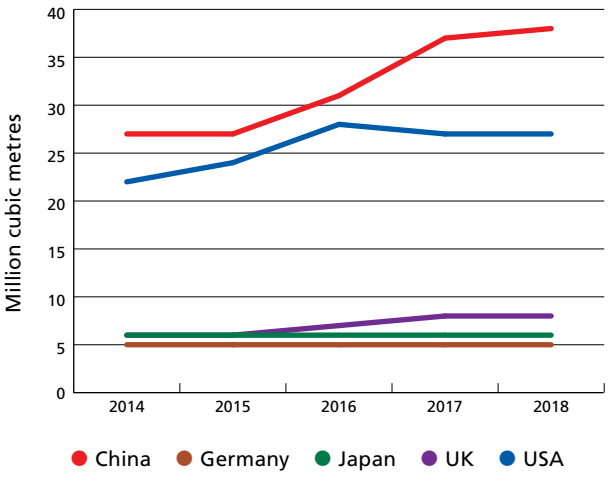


FIGURE 6B. Sawnwood imports



WOOD-BASED PANELS

The wood-based panels product category consists of plywood (including blockboard and laminated veneer lumber), particle board, oriented strand board (OSB) and fibreboard. Fibreboard is also subdivided in FAO's statistics into hardboard, medium/high density fibreboard (MDF/HDF) and other fibreboard, based on the density and manufacturing process of these panels.

In 2018, global wood-based panel production reached 408 million m³, a 1 percent increase over the previous year (404 million m³) and a 9 percent increase over the observed period (Figure 7a). Wood-based panels was the product category that saw fast growth in production, owing to the rapid and consistent growth in the Asia-Pacific region until 2016. In later years, global production has stabilised.

Asia-Pacific region accounted for 61 percent of global production in 2018 (248 million m³), followed by Europe (90 million m³, or 22 percent), Northern America (48 million m³, or 12 percent), Latin America and the Caribbean (19 million m³, or 4 percent) and Africa (3 million m³ or 1 percent). Production in Europe and Latin America and the Caribbean increased by 2 percent in 2018, and stayed almost unchanged in other three regions.

Global trade in wood-based panels has increased gradually since 2014. In 2018, it grew by 3 percent to 91 million m³, equal to 22 percent of total production. Two regions – Europe and Asia-Pacific – dominated international trade in wood-based panels, and together accounted for 71 percent of all imports and 82 percent of exports in 2018. Imports and exports in both of these regions have increased since 2014. In Northern America and Latin America and the Caribbean, wood-based panel exports and imports also increased from 2014 to 2018.

Northern America was the main net importer of wood-based panels in 2018 (9 million m³), followed by Africa (2 million m³). Asia-Pacific region meanwhile exported 6 million m³ of the products to the rest of the world as the largest net exporter (Figure 7b). Net exports from Europe and Latin America were 8 million m³ combined. Within Europe, Western Europe has increasingly become a net importer of wood-based panels while Eastern Europe has emerged as one of the largest net exporters, with growing trade surplus in wood-based panels mainly owing to within-region trade.

The five largest producers of wood-based panels (China, USA, Russian Federation, Germany and Canada) accounted for 69 percent (282 million m³) of global production in 2018 (Figure 8a). China alone accounted for 50 percent of global production in 2018. After continuous growth until 2016, production in China somewhat stabilised in later years. The most notable trend was the

FIGURE 7A. Wood-based panel production

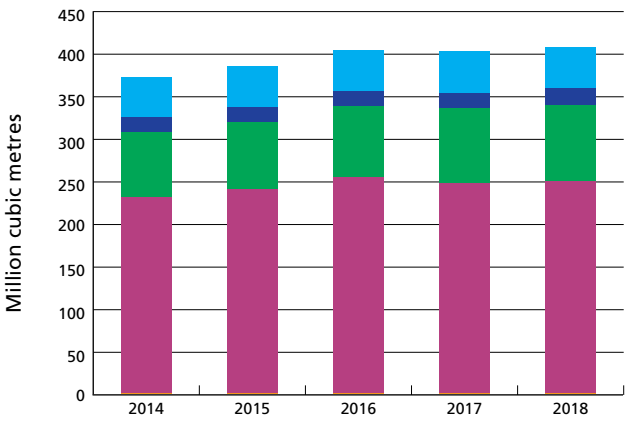
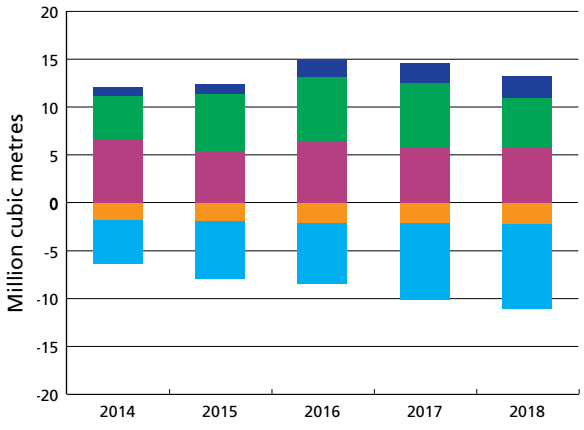
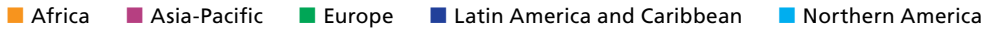


FIGURE 7B. Wood-based panel net trade





39 percent increase in production in the Russian Federation over the period, from 12 million m³ in 2014 to 17 million m³ in 2018. In contrast, production in USA, Germany and Canada remained quite stable over the period. In 2018, Germany surpassed Canada to become the fourth-largest producer.

The five largest exporters (China, Canada, Germany, the Russian Federation and Thailand) exported a combined 41 million m³ in 2018 (equal to 44 percent of global exports) (Figure 8b). From 2015, China's exports stabilised at 14 million m³. In the Russian Federation and Thailand exports surged by 71 percent and 33 percent respectively from 2014. Canada and Germany saw a moderate 10 percent increase over the period 2014-2018. In 2016, the Russian Federation and Thailand overtook Malaysia leaving it behind as sixth-largest exporter of wood-based panels.

The four top consumers of wood-based panels are the same as the four largest producers, suggesting that the products are mostly consumed domestically. The trends in consumption are similar to those in production (Figure 9a). The fifth-largest consumer is Poland (overtaking Turkey and Japan in 2015), where consumption increased from 9 million m³ in 2014 to 12 million m³ in 2018.

FIGURE 8A. Wood-based panel production

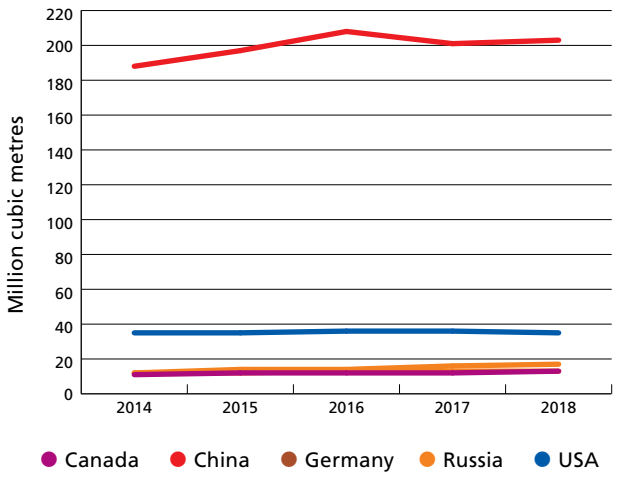


FIGURE 8B. Wood-based panel exports

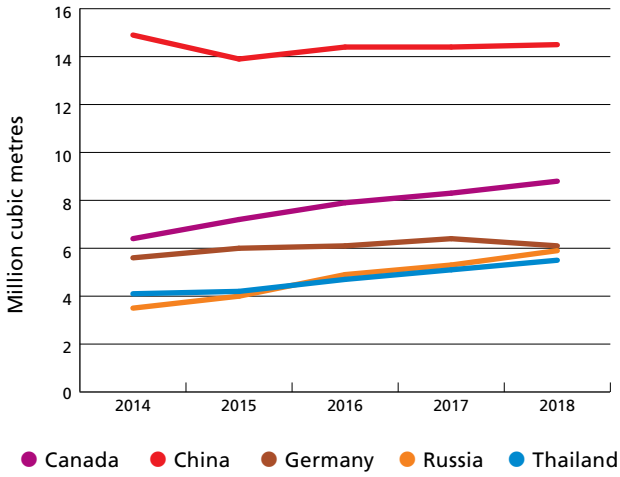


FIGURE 9A. Wood-based panel consumption

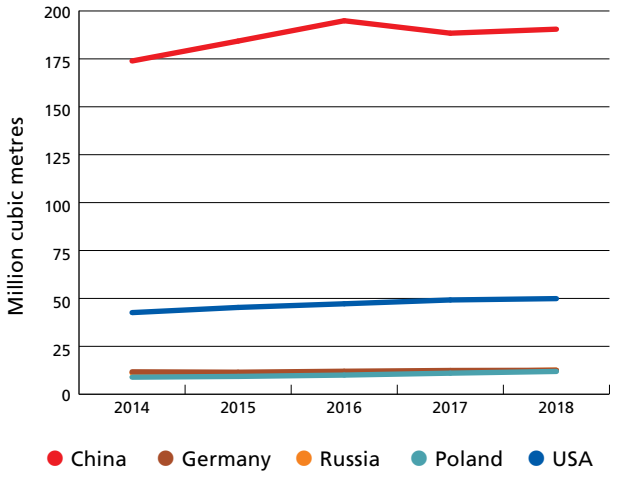


FIGURE 9B. Wood-based panel imports

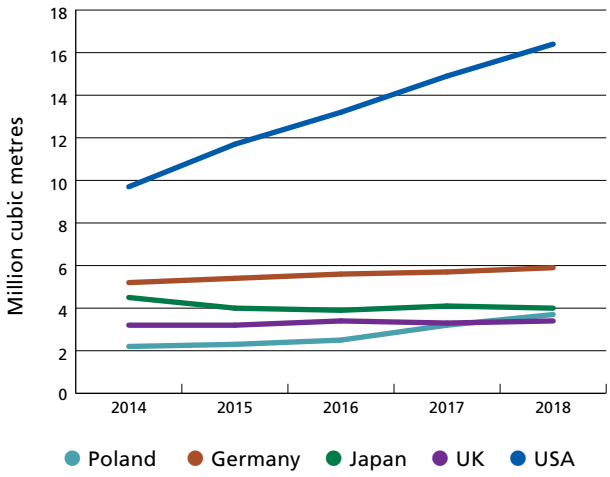


FIGURE 10A. Wood-based panel production

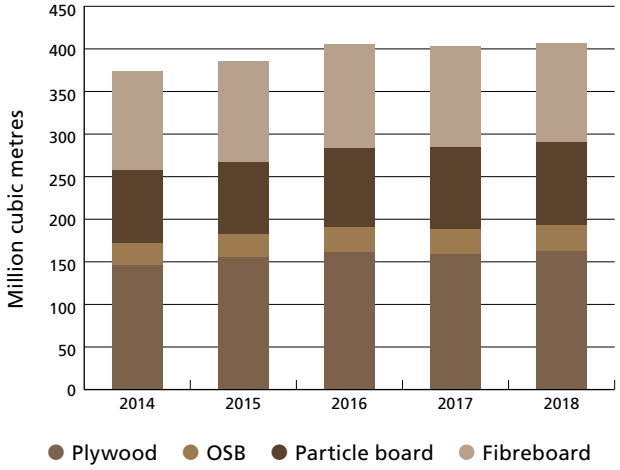
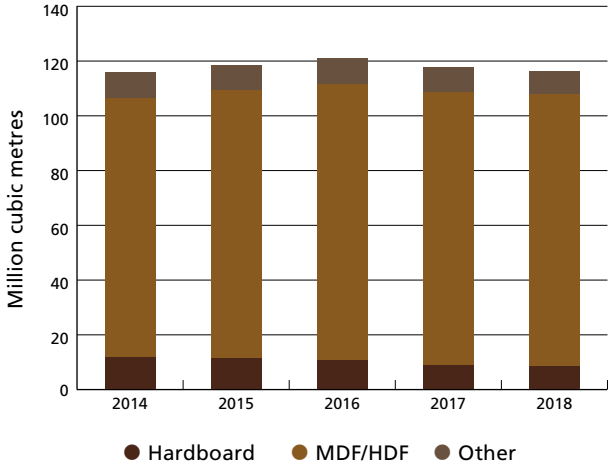


FIGURE 10B. Fibreboard production



The USA was the top importer in 2018 (with imports equal to 33 percent of consumption), followed by Germany, Japan, Poland and the UK (Figure 9b). Together, these five countries imported 33 million m³ (or 33 percent of all global imports) in 2018. Imports have increased in all of these countries since 2014, except Japan. The growth in imports has been faster in the USA and Poland (70 percent). Germany and the UK grew moderately in these last years. In 2018, Poland became fourth-biggest importer, surpassing the UK and Canada.

Figures 10a and 10b show recent trends in production of the wood-based panels by product category. Plywood (including blockboard and LVL) has become the dominant wood-based panel type, with production of 163 million m³ (representing 40 percent of all wood-based panel production) in 2018, an increase of 11 percent from 2014. This is mainly due to a rapid growth in plywood production in China, where production increased by 12 percent over the observed period, accounting for 72 percent of global production in 2018. In the remaining countries, the growth in plywood production was at 8 percent over the same period.

There are regional differences in the composition of various wood-based panel products. Reconstituted panels (OSB, particle board and fibreboard) dominate other product categories in Northern America and Europe while plywood (including blockboard) is the major wood-based panel product in the Asia-Pacific region (mainly in China). In Latin America and the Caribbean, each major wood-based panel product accounts for about an equal share of the total production.

Among panels, OSB and particle board had the fastest growth in production, increasing by 25 percent and 13 percent respectively over the period from 2014 to 2018. Most of this growth for both products occurred in Eastern Europe including the Russian Federation.

Global production of fibreboard reached its peak in 2016 (121 million m³), and declined by 4 percent to 116 million m³ in 2018, the same level as in 2014 (Figure 10b). Production of MDF/HDF, which accounted for 85 percent of all fibreboard production in 2018, increased by 5 percent over 2014–2018. Other types of fibreboard saw a decline of 19 percent over the period.

FIBRE FURNISH

In FAO's forest product statistics, the fibre used to manufacture paper and paperboard is referred to as "fibre furnish". This includes recovered paper (wastepaper), other fibre pulp and the wood pulp used to make paper. The latter includes mechanical, semi-chemical and chemical wood pulp, but not dissolving pulp (which is used for other purposes). Chemical wood pulp is also sub-divided in statistics into bleached or unbleached and sulphite or sulphate wood pulp, and various combinations of these different products are presented as product groups in FAOSTAT and the Yearbook.

Global production of fibre furnish in 2018 amounted to 421 million tonnes (Figure 11a), the same as in previous year. It was above the level of 2014 by 2 percent (411 million tonnes).

The regional distribution of production in 2018 was as follows: Asia-Pacific – 151 million tonnes (36 percent); Northern America – 115 million tonnes (27 percent); Europe – 108 million tonnes (26 percent); Latin America and Caribbean – 44 million tonnes (10 percent); and Africa – 4 million tonnes (1 percent). Production in the Asia-Pacific region, Europe, Northern America and Africa remained roughly the same over the period from 2014 to 2018. In contrast, production in Latin America and the Caribbean has grown consistently over the period. Production in this region grew by 4 percent in 2018 and by 15 percent from 2014 to 2018 as new pulp mills came into operation in South America.

About one quarter of fibre furnish production was traded in international markets in 2018, trade which increased consistently over the period (from 109 million tonnes in 2014 to 117 million tonnes in 2018 – equal to a 8 percent total increase). Net trade expanded over the period (Figure 11b). The Asia-Pacific and Africa are net importing regions, and net imports of fibre furnish increased by 9 percent over the period, from 48 million tonnes in 2014 to 53 million tonnes in 2018. Net imports have also increased at about the same rate as consumption in the Asia-Pacific region and accounted for 26 percent of consumption in 2018. The main net exporter is Northern America, totalling 29 million tonnes in 2018, followed by Latin America and the Caribbean at 19 million tonnes and Europe at 5 million tonnes. Net exports increased by 34 percent over the period (from 14 million tonnes to 19 million tonnes in 2014-2018) in Latin America and the Caribbean.

The main producers of fibre furnish are the USA, China, Japan, Brazil and Canada (Figure 12a). Together, these countries produced 237 million tonnes of fibre furnish in 2018 (56 percent of the global total). As Figure 12a shows, production remained roughly

FIGURE 11A. Fibre furnish production

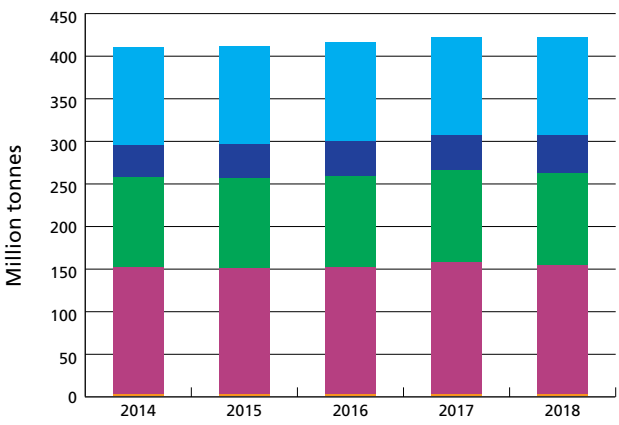
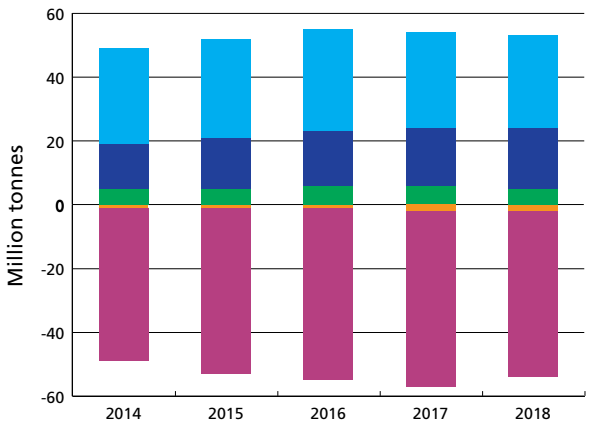


FIGURE 11B. Fibre furnish net trade



Africa Asia-Pacific Europe Latin America and Caribbean Northern America

FIGURE 12A. Fibre furnish production

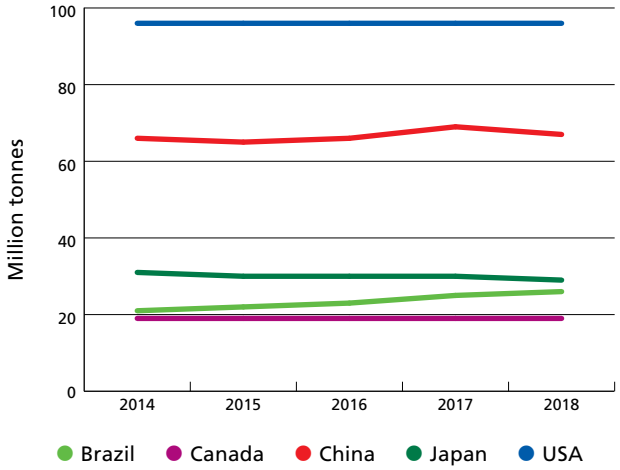


FIGURE 12B. Fibre furnish exports

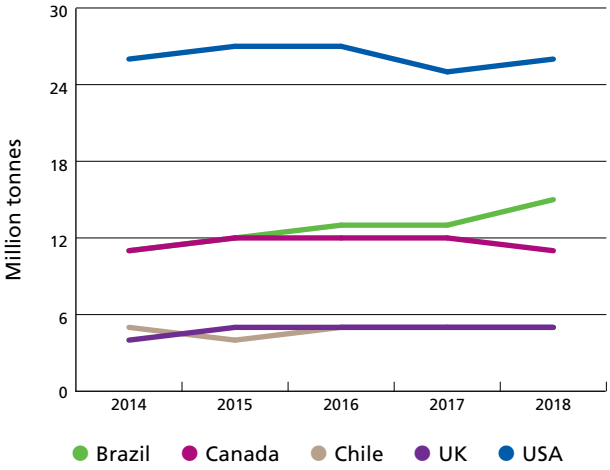


FIGURE 13A. Fibre furnish consumption

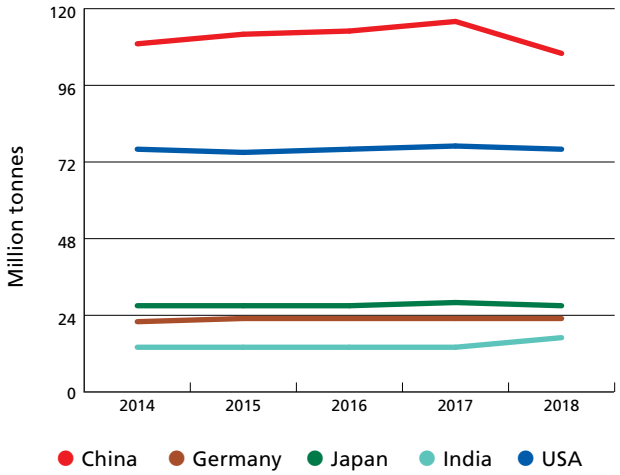
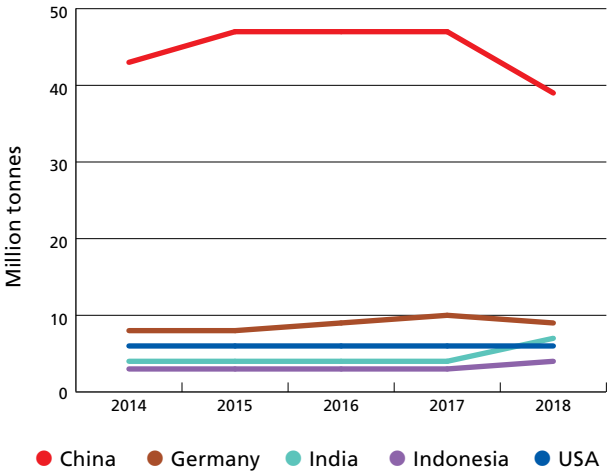


FIGURE 13B. Fibre furnish imports



the same or slightly declined over the period in the USA, China, Japan and Canada. This was because of stagnating or declining paper production and consumption in these countries, which is now a common trend in many countries due to an increasing use of electronic media. Fibre furnish production (and exports) has been consistently increasing in Brazil, where fast-growing planted forests give the country a competitive advantage in the manufacturing of wood pulp. Brazil increased production by a further 7 percent in 2018 (by 23 percent from 2014 to 2018).

Three of the main producers of fibre furnish are also the main exporters (the USA, Canada and Brazil), with Chile in fourth and the UK in fifth place (Figure 12b). These five countries exported 61 million tonnes (52 percent of the global total) in 2018. Exports increased by 38 percent over the observed period in Brazil (overtaking Canada to become second exporter in 2016), and remained roughly the same in USA, Canada, Chile and the UK. As already noted for Brazil, these trends are driven by each country's competitiveness in wood pulp manufacturing. However, because a large part of fibre furnish consists of recovered paper

(56 percent), the need to dispose recovered paper can also be an important driver of growth in places like the USA and UK.

The five main consumers of fibre furnish are China, the USA, Japan, Germany and India, which altogether consumed 248 million tonnes (59 percent of the global total) of fibre furnish in 2018 (Figure 13a). Consumption in China dropped by 9 percent in 2018 (from 116 to 106 million tonnes) due to imposed restrictions on imported and collected recovered paper. At the same time, consumption in India soared from 14 million tonnes in 2017 to 17 million tonnes in 2018. Consumption in USA, Japan and Germany slightly declined from 2014 to 2018.

Four of the largest consumers of fibre furnish are also the largest importers (China, Germany, India and the USA); Indonesia is another top importer (Figure 13b). Imports to these five countries amounted to 66 million tonnes (56 percent of the global total) in 2018. Comparing the two figures, it becomes evident that consumption in several of these countries is highly dependent on imports, which account for 37 to 43 percent of consumption in China, Germany and India. Over the observed period, imports grew significantly in India (88 percent) and Indonesia (26 percent) while in the other three countries imports did not change by more than 11 percent. However, a steep decline in China imports by 17 percent in 2018 (from 47 million tonnes in 2017 to 39 million tonnes) negatively affected global trade which decreased by 2 percent.

Figure 14a shows the trends in the composition of fibre furnish consumption between the main products included in this product group. It shows that recovered paper and chemical wood pulp are the two main products used to manufacture paper, accounting for 54 and 35 percent of all fibre furnish consumption respectively in 2018. Mechanical and semi-chemical wood pulp is the next most important (8 percent), followed by other fibre pulp (3 percent).

The trends in consumption also show that recovered paper accounts for more than half of all fibre used to make paper. In 2018, recovered paper consumption amounted to 229 million tonnes (54 percent of the total), compared to 227 million tonnes (55 percent of the total) in 2014. In contrast, consumption of other fibre pulp has declined in absolute terms. Total wood pulp consumption and its share slightly increased over the same period.

Figure 14b shows the share of recovered paper in the consumption of total fibre furnish (the utilization rate) in each of the main regions. Differences in the levels of utilization and trends reflect the geographical and socio-economic situations in each region, as well as other factors such as recycling and waste disposal policies and availability of pulpwood. For example, the Asia-Pacific region has a high utilization rate (partly met by a large amount of recovered paper imports) owing to the high demand and intense competition for wood fibre there. Conversely, in Northern America, where the availability of wood fibre is relatively high, recovered paper utilization is much lower (and a lot of recovered paper is actually exported to the Asia-Pacific region). Europe lies somewhere in between, with both a relatively high availability of wood fibre and numerous policies promoting recycling that encourage the use of recovered paper.

FIGURE 14A. Fibre furnish consumption

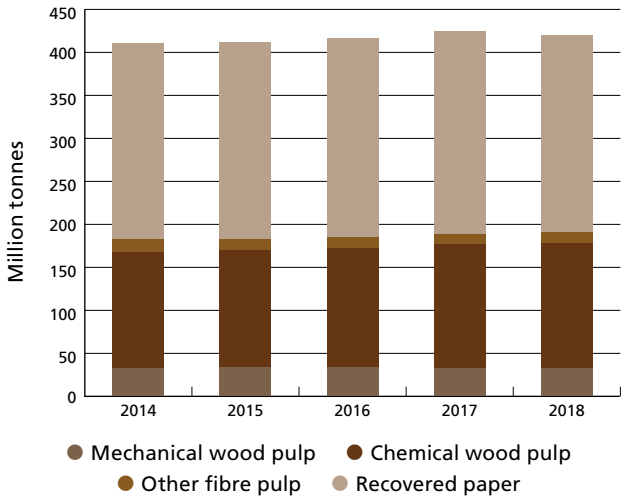
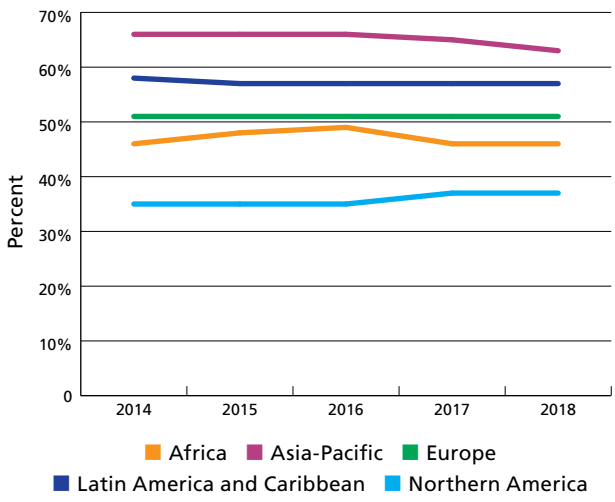


FIGURE 14B. Recovered paper utilization rate



PAPER AND PAPERBOARD

The paper and paperboard product group comprises graphic papers (newsprint, printing and writing paper) and other paper and paperboard. The latter is further subdivided into packaging paper and paperboard, household and sanitary paper, and other paper and paperboard not elsewhere specified (n.e.s).

Paper and paperboard production increased over the period 2014–2018 from 404 million tonnes to 409 million tonnes (Figure 15a). After continuous slow growth in 2014-2017, production volume decreased by 2 percent in 2018.

Almost all of these fluctuations were due to changes in the Asia-Pacific region in which production dropped by 3 percent in 2018. Europe and Latin America and the Caribbean saw an increase of 2 percent and 9 percent, while Northern America and Africa recorded a decline of 3 percent and 14 percent respectively. In 2018, the regional distribution of production was as follows: Asia-Pacific – 196 million tonnes (48 percent); Europe – 106 million tonnes (26 percent); Northern America – 82 million tonnes (20 percent); Latin America and the Caribbean – 22 million tonnes (5 percent); and Africa – 4 million tonnes (1 percent).

With respect to international trade, about one quarter of production is exported (roughly the same proportion of fibre furnish that is exported). Global trade remained quite stable at around 112 million tonnes over the period. Thus, changes in global demand (e.g. high growth in demand in Asia-Pacific and declining demand in Europe and Northern America) seem to have had more of an impact on international trade in fibre furnish than on trade in paper and paperboard.

Figure 15b shows a slight increase in net trade between the regions in the observed period. Europe and Northern America are net exporting regions, with net exports of 14 million tonnes and 7 million tonnes respectively in 2018. Asia-Pacific, Latin America and the Caribbean and Africa are all net importers, with net imports of 8 million tonnes, 7 million tonnes and 5 million tonnes respectively in 2018.

The two largest paper and paperboard producers in 2018 were China (104 million tonnes) and the USA (72 million tonnes) (Figure 16a). Their combined production accounted for 43 percent of global production. The other three largest producers were Japan (26 million tonnes), Germany (23 million tonnes) and India (17 million tonnes), which accounted for another 16 percent of global production. Among top-five producers, India was the only country that increased production significantly (19 percent) over the observed period. Production in China and Germany remained about the same from 2014 to 2018, while the USA and Japan saw a decline of 2 percent.

FIGURE 15A. Paper and paperboard production

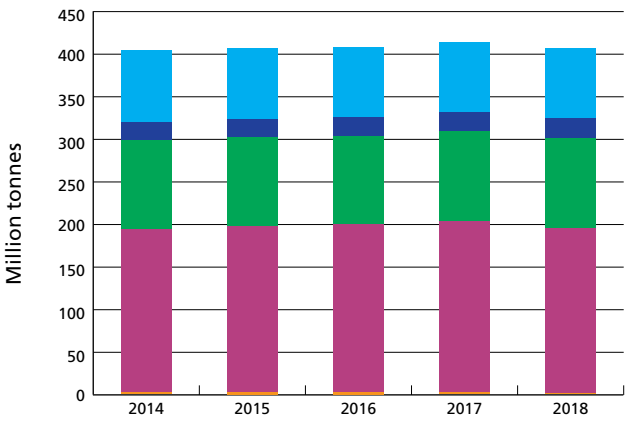
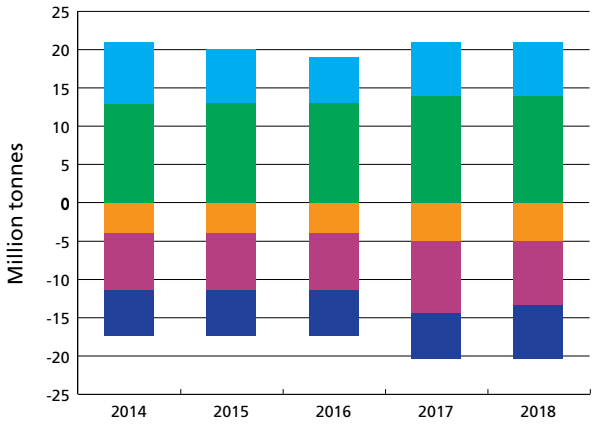
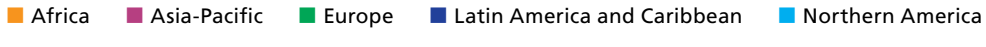


FIGURE 15B. Paper and paperboard net trade





Exports from the five largest paper and paperboard exporters ranged between 8 million tonnes and 14 million tonnes (Figure 16b). These five countries – Germany, the USA, Finland, Sweden and Canada – exported 53 million tonnes (45 percent of global exports) in 2018. Figure 16b also shows that exports are quite variable from year to year. From 2014 to 2018, exports from Germany and Finland increased by 10 percent and 3 percent respectively and remained unchanged in Sweden. Exports from USA and Canada were down by 4 percent and 11 percent respectively.

Trends in paper and paperboard consumption were similar to the trends in production (Figure 17a). Consumption in China increased by 4 percent, from 102 million tonnes in 2014 to 105 million tonnes in 2018. After a record consumption in 2017 (110 million tonnes), China's consumption fell by 4 percent in the following year due to continued decline in production of graphic papers and insufficient raw material (recovered paper) supply that hampered production of packaging papers. Increased imports of paper by 3 million tonnes did not offset the decline of 7 million tonnes in the country in 2018. Consumption has been growing quite steadily in India (19 percent from 2014 to 2018) and remained quite stable in Germany, Japan and the USA. Total consumption in these five countries amounted to 242 million tonnes in 2018, i.e. 60 percent of global consumption.

FIGURE 16A. Paper and paperboard production

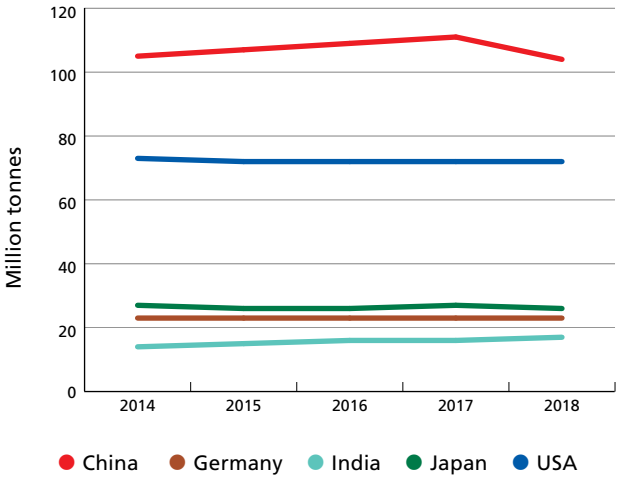


FIGURE 16B. Paper and paperboard exports

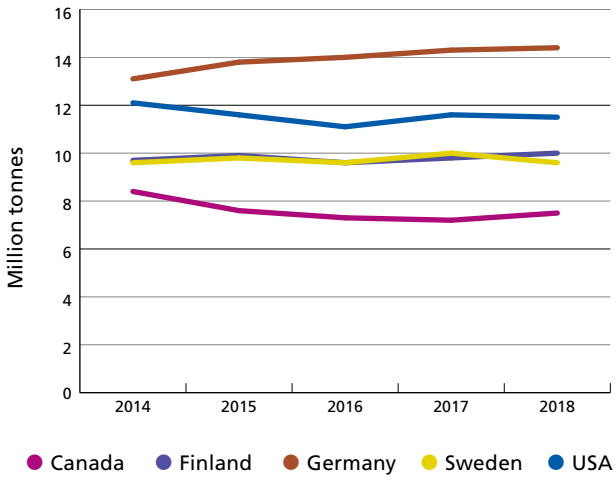


FIGURE 17A. Paper and paperboard consumption

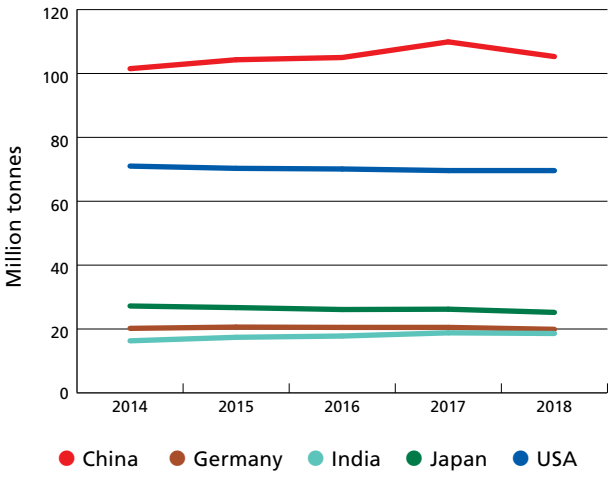
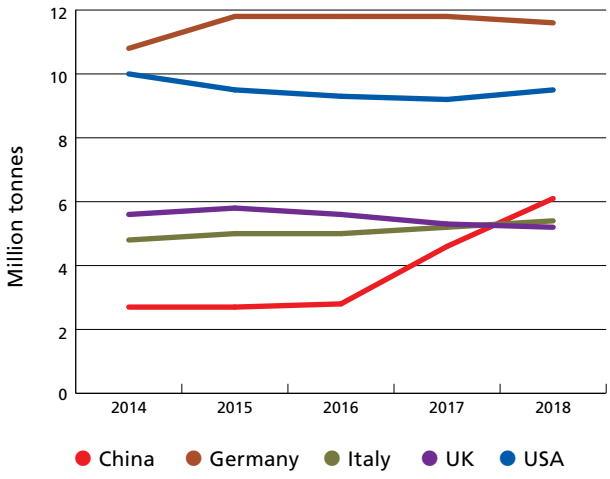


FIGURE 17B. Paper and paperboard imports



The five largest importers – Germany, the USA, China, Italy and the UK – imported 38 million tonnes of paper and paperboard in 2018, an increase of 12 percent over the observed period. China's imports doubled to 6 million making it the third biggest importer in 2018 (was sixth in 2017). A decline in imports was seen in USA (5 percent) and UK (8 percent) over the period (Figure 17b). In Germany imports remained quite stable, while Italy recorded a 13 percent growth over the period to become forth biggest importer in 2018 (surpassing France in 2016 and UK in 2018). The other notable feature of international trade in paper and paperboard is that imports are distributed much more evenly across different countries, with these top five importers accounting for only 33 percent of global imports in 2018.

Figure 18a shows the distribution of paper and paperboard production among the five different product types of this group. Wrapping and packaging paper accounted for over half (240 million tonnes, or 59 percent of the total) of all production in 2018. Printing and writing paper was the second-largest (96 million tonnes or 23 percent of the total), followed by household and sanitary paper (9 percent), newsprint (5 percent), and other paper and paperboard. The two main trends are the gradual decline of graphic papers (newsprint and printing and writing papers) and growth in other paper and paperboard grades. Production of graphic papers fell by 10 percent from 129 million tonnes in 2014 to 117 million tonnes in 2018. Wrapping and packaging paper production increased by 6 percent (from 227 million tonnes to 240 million tonnes) over the period. Household and sanitary paper production also increased by 11 percent to 36 million tonnes; production of other paper remained roughly the same over the period.

Figure 18b shows the amount of paper consumption collected for re-use in the pulp and paper industry (i.e. the recovery rate). At the global level, this remained roughly the same at 56 percent over the observed period. In the three main regions that consume paper and paperboard (and use recovered paper), the recovery rates were high and remained stable over the period. In 2018, Northern America and Europe had the highest recovery rate (67 percent and 66 percent, respectively), followed by the Asia-Pacific region (51 percent).

Some of the factors that explain the differences in recovery rates are the same as noted previously (for the utilization rate), but one other important factor is the "hidden" trade in wrapping and packaging paper. This occurs where manufactured goods are packed in paperboard and traded across borders (and therefore the movement of the paperboard is not recorded). This partly explains the relatively low recovery rate in the Asia-Pacific region, where packaging of goods for export is counted as paperboard consumption; this packaging paper is then recovered and counts as fibre furnish production in other regions such as Europe and Northern America.

FIGURE 18A. Paper and paperboard production

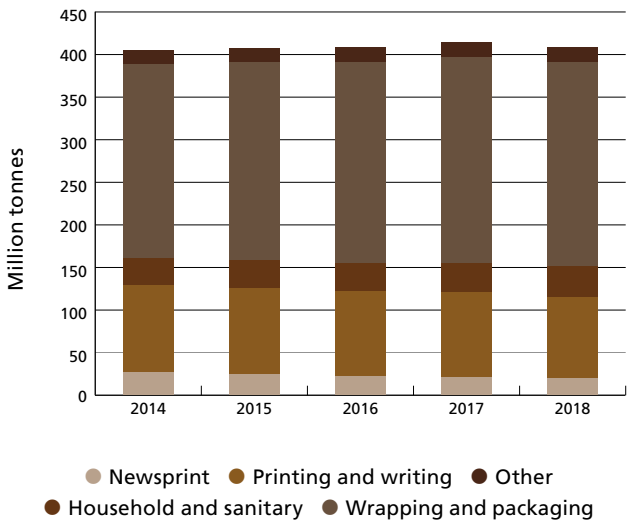
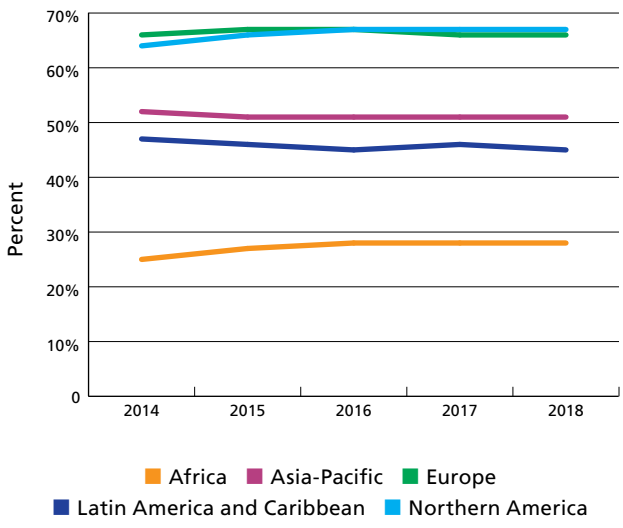


FIGURE 18B. Recovered paper recovery rate



WOOD FUEL, CHARCOAL AND PELLETS

Wood fuel is roundwood that is used as fuel for cooking, heating or power production and it includes wood used to make charcoal and pellets. It includes wood harvested from main stems, branches and other parts of trees (where these will be used for fuel) and wood chips to be used for fuel that are made directly (i.e. in the forest) from roundwood. However, it does not include all types of wood used for energy (e.g. wood residues from the forest processing industry, black liquor or recovered post-consumer wood). It is subdivided into wood fuel from coniferous and non-coniferous species. Statistics for charcoal production and trade are also presented as a separate dataset in FAOSTAT and the Yearbook. Data series for wood pellets and other agglomerates (briquettes, etc.) appear in FAOSTAT and the Yearbook from 2012 onwards.

Global wood fuel removals amounted to 1 943 million m³ in 2018 (Figure 19a). This was an increase of 2 percent from 2014. At the regional level there are some differences in trends. For example, wood fuel removals decreased in Asia-Pacific (by 3 percent), remained unchanged in Latin America and the Caribbean, but increased in Northern America (by 55 percent), Europe (9 percent), and Africa (4 percent) over the period 2014–2018.

The Asia-Pacific region was the largest wood fuel-producing region in 2018, accounting for 37 percent (728 million m³) of global removals. Africa ranked second, with a 36 percent share (700 million m³), followed by Latin America and the Caribbean (14 percent), Europe (9 percent) and Northern America (4 percent).

About 53 million tonnes of wood charcoal were produced in 2018, with an increase of 3 percent over the observed period (Figure 19b). In 2018, Africa accounted for 64 percent of global charcoal production (with an increase in production from 31 million tonnes in 2014 to 34 million tonnes in 2018). Production in Latin America and the Caribbean declined by 1 million tonnes to 8 million tonnes from 2014 to 2018. In the Asia-Pacific region production remained stable at 9 million tonnes. Charcoal production was relatively low and remained mostly unchanged in the other two regions.

Different production growth in Africa and Latin America can be explained due to the fact that the main charcoal users vary in these two regions. In Africa, charcoal is mainly used by urban households for cooking, so consumption trends change only gradually. In Latin America and the Caribbean, the steel industry in Brazil is the main charcoal consumer, so trends in production are closely linked to more volatile economic trends.

Figure 20 shows estimated proportion of all roundwood that was used as wood fuel in 2018 (in FAO statistics, roundwood is simply divided into industrial roundwood and wood fuel). At the global

FIGURE 19A. Wood fuel removals

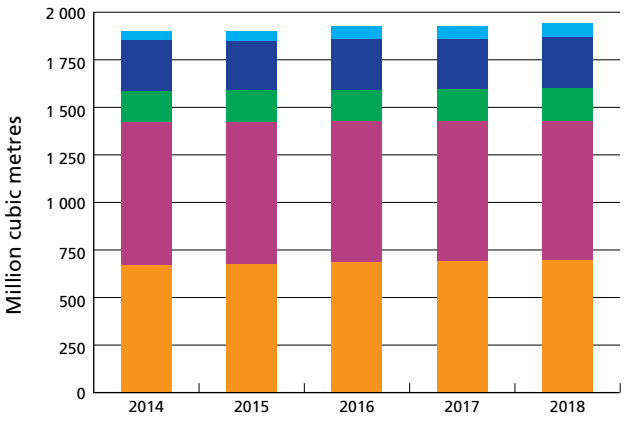
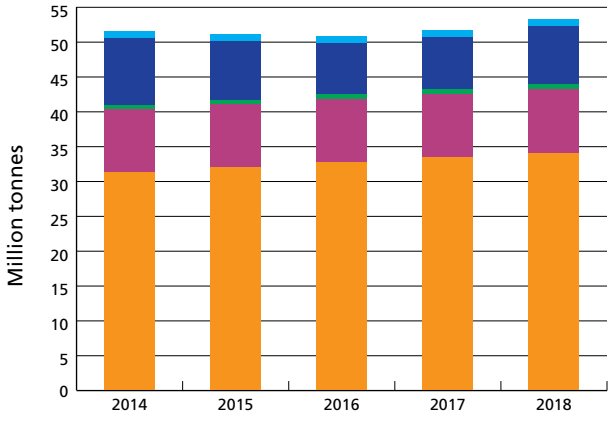
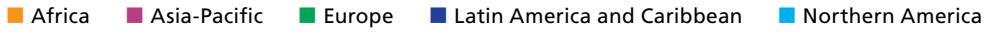


FIGURE 19B. Wood charcoal production



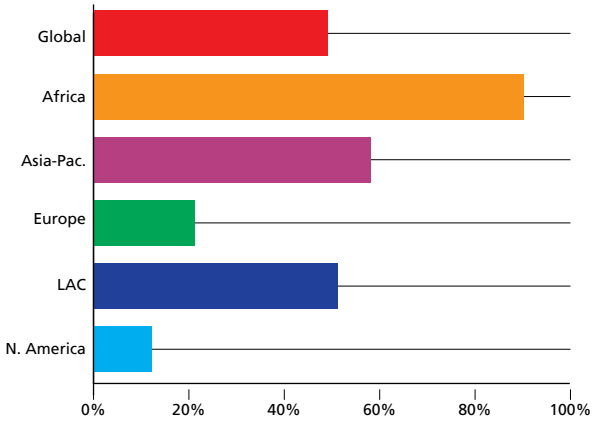


level, wood fuel removals accounted for half (49 percent) of all roundwood produced in 2018. This proportion remained stable over the observed period.

Wood fuel production is by far the most significant in Africa, where it accounted for 90 percent of roundwood removals in 2018. It is also relatively important in the Asia-Pacific region, where it accounted for 58 percent of roundwood removals. Wood fuel use in Latin America and the Caribbean was close to the global average at 51 percent of all roundwood production, whereas in Europe and Northern America it accounted for only 21 percent and 12 percent of all roundwood production respectively. These proportions remained relatively unchanged in most of the regions except Northern America, where the share of wood fuel increased from 8 percent in 2014 to 12 percent in 2018. This can be explained by increased use of roundwood for wood pellet production in USA in recent years.

In contrast to the trends for wood fuel and charcoal, production and trade in wood pellets continued to surge (Figure 21a). Pellet production increased from 25 million tonnes in 2014 to 37 million tonnes in 2018. Nearly all production remains concentrated in Europe and Northern America. However the share of production in Asia-Pacific has been constantly increasing (from 7 percent in 2014 to 15 percent in 2018). In 2018, the regional distribution of production was as follows: Europe – 20.6 million tonnes (55 percent); Northern America – 10.5 million tonnes (28 percent); Asia-Pacific – 5.5 million tonnes (15 percent); and Latin America and the Caribbean and Africa – 0.7 million tonnes combined (2 percent).

FIGURE 20. Wood fuel share in roundwood removals in 2018



With respect to international trade, over half of production (61 percent) was exported in 2018. Exports increased from 15.1 million tonnes in 2014 to 23.7 million tonnes in 2018. Net trade between the regions grew as well. Northern America was a net exporting region, with net exports of 8 million tonnes in 2018 (Figure 21b). Europe and Asia-Pacific registered net imports of 6 million tonnes and 1 million tonnes respectively in 2018. Net exports from the Latin America and the Caribbean doubled in 2018 but remained insignificant (0.2 million tonnes).

FIGURE 21A. Wood pellet production

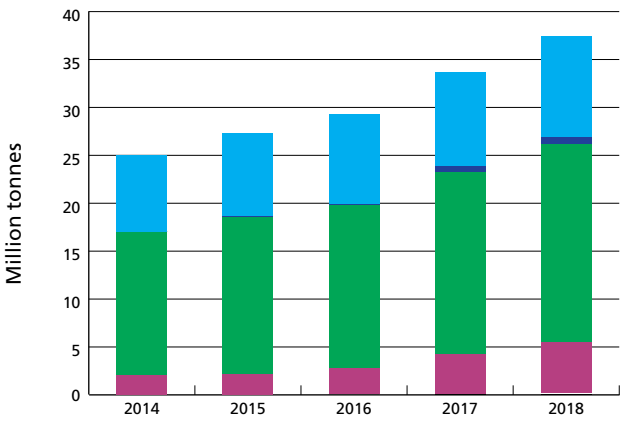
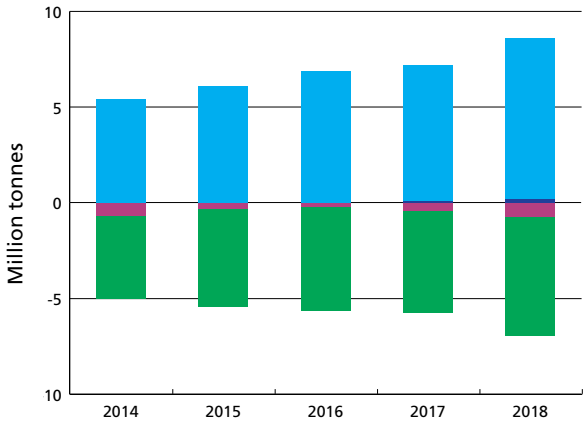
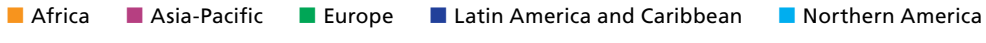


FIGURE 21B. Wood pellet net trade





The five largest pellets producers in 2018 were the USA (7.5 million tonnes), Canada (3.0 million tonnes), Viet Nam (2.5 million tonnes), Germany (1.9 million tonnes) and Sweden (1.7 million tonnes). Together, their production accounted for 46 percent of global production.

Three largest pellets producers (the USA, Canada and Viet Nam) are also the largest exporters, joined by Latvia and the Russian Federation. Together, these five countries exported 14 million tonnes (60 percent of global exports) in 2018.

Germany is the only top producer that is among the largest consumers. Other countries that ranked among the top five consumers of wood pellets in 2018 were the UK (first), Republic of Korea (second), Denmark (third) and Italy (fourth). Total consumption in these five countries amounted to 19 million tonnes in 2018, or 54 percent of global consumption. Consumption increased in all five major consumers with the strongest growth recorded in the Republic of Korea (106 percent), Denmark (51 percent) and the UK (46 percent) over the period from 2014 to 2018.

The five largest importers (the UK, Denmark, Republic of Korea, Italy and Belgium) imported 18 million tonnes of wood pellets – an increase of 54 percent from 2014. In the UK imports increased by 48 percent (from 4.8 million tonnes in 2014 to 7.0 million tonnes in 2018), in Denmark by 69 percent (from 2.3 million tonnes in 2014 to 3.8 million tonnes in 2018), and in the Republic of Korea imports grew from 1.8 million tonnes in 2014 to 3.4 million tonnes in 2018. Imports in the other two countries remained also increased. Together, these five countries accounted for 80 percent of global imports in 2018 (the UK alone stood for 32 percent).

DEVELOPMENT OF FAO'S FOREST PRODUCT STATISTICS

This final section details recent changes to FAO's forest product statistics, the results of capacity-building efforts, and improvements in the collection and dissemination of statistics. Below are some highlights from 2018-2019.

Enhancing dissemination of forest product statistics

- FAO's *Forest product statistics website* has been regularly updated and is available in Arabic, Chinese, English, French, Russian and Spanish.
- A new data series on production and trade in post-consumer recovered wood was launched in the *FAOSTAT-Forestry database*. Consumption of post-consumer recovered wood exceeded 27 million tonnes in 2018 and most of this volume was collected and consumed in Western Europe, the UK and Italy. This new data will contribute to the monitoring of wood raw material and product flows to support a circular bioeconomy.
- Data series on export and import of coniferous and non-coniferous wood fuel were launched in the *FAOSTAT-Forestry database*.
- Results of the *Recovered Paper Data 2017* survey were released. From 2019, questions on recovered paper were incorporated into the annual *Pulp and Paper Capacities survey*. The *results, 2018-2023* were latest published.
- The format and scope of the *FAO Yearbook of Forest Products* were enhanced. Improvements in the latest yearbook, the *71st edition*, include the addition of data on wood pellets and other agglomerates and more detailed paper and paperboard statistics.

Improving international statistical classifications and standards

- FAO, in collaboration with the International Tropical Timber Organization (ITTO), United Nations Economic Commission for Europe (UNECE) and the Statistical Office of the European Union (Eurostat) proposed amendments for wood and non-wood product codes in the Harmonized System (HS) to the World Customs Organization (WCO) for the HS 2022 revision in 2017. The proposal was further scrutinized by WCO in 2018 and 2019. The new structure of HS 2022 will be announced by WCO in early 2020 and will come into force beginning in January 2022.
- FAO contributed to the revision of the Classification of Individual Consumption According to Purpose (COICOP) 2018, officially endorsed in March 2018. FAO's proposal to add two new codes under *04.5.4 Solid fuels* was accepted *(04.5.4.2 Wood including pellets and briquettes* and *04.5.4.3 Charcoal).* The classification is available at UN Statistics Division's *website*.
- In 2015, FAO's Forest Products Programme initiated two projects with a focus on improving developing countries' capacity to collect statistics on forest products. The projects were co-funded by the *Global Strategy to Improve Rural and Agricultural Statistics*. Both projects were successfully completed and the following final outputs published in 2018:
  - *Guidelines for the Incorporation of a Woodfuel Supplementary Module into Existing Household Surveys in Developing countries*
  - *Guidelines on data collection for national statistics on forest products*

Strengthening national statistical capacities

- FAO in collaboration with ITTO, Viet Nam Administration of Forestry (VNFOREST) and with support of the Forest Resources and Environment Center (FREC) conducted a *National Workshop on Forest Product Statistics* in Da Nang, Viet Nam on 10-12 April 2019. The workshop brought together over 30 national participants, including representatives from VNFOREST, General Statistics Office, General Department of Customs, Forest Inventory and Planning Institute, FREC, forest products associations, private companies, and academia.

For more information about FAO's forest product statistics, please contact:

Forest Products and Statistics Team
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